REMARKS

In this Response, claims 1-4, 6-8, 10, 32-34, 36-37, and 42 are currently pending, of which claims 1, 32, and 42 are independent. Claims 1, 2, 32, and 42 have been amended. Claims 5, 9, 11-31, 35, 38-41, and 43-44 have been canceled without prejudice. Claims 11-31, 38-41, 43 and 44 have been previously withdrawn. Applicants reserve the right to pursue the canceled claims in a continuation or divisional application. No new matter has been added.

Applicants thank the Examiner for withdrawing the previous 35 U.S.C. § 102 rejection of claim 42 as being anticipated by U.S. Patent No. 7,167,817 to Mosterman et al. in response to the amendments to claim 42.

I. Claim Amendments

Independent claims 1 and 32 have been amended to recite "a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time." Independent claim 42 has been amended to recite "a graphical modeling application for simulating behavior of a dynamic system over a specified period of time using information in a graphical model." Support for these amendments may be found in the Specification at least on page 1, ¶ 4 through page 2, ¶ 1.

II. Summary of Claim Rejections

Claims 1-10, 32-37, and 42 are rejected under 35 U.S.C. § 112 as failing to comply with the enablement requirement.

Claims 1, 2, 6, 7, 10, 32, 33, 36, 37, and 42 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,411,923 to Stewart et al. (hereinafter "Stewart").

Claims 1-7, 9-10, 32-37, and 42 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,470,482 to Rostoker et al. (hereinafter "Rostoker").

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Rostoker as applied to claim 2 in view of "SIMULINK Model-Based and System-Based Design Version 4" by the MATHWORKS (hereinafter "Simulink, Version 4 reference").

III. 35 U.S.C. § 112 rejections

The Examiner rejects claims 1-10, 32-37, and 42 as failing to comply with the enablement requirement under 35 U.S.C. § 112, first paragraph.

Claims 5, 9, and 35 have been cancelled. Thus, the above 35 U.S.C. § 112 rejection of claims 5, 9 and 35 are moot.

Applicants respectfully submit that claims 1-4, 6-8, 10, 32-34, 36-37, and 42 comply with the enablement requirement under 35 U.S.C. § 112. Amended claims 1, 32, and 42 do not recite "an executable graphical model." Instead, claims 1 and 32 have been amended to recite "providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time" and claim 42 has been amended to recite "a graphical modeling application for simulating behavior of a dynamic system over a specified period of time using information in a graphical model" to parallel the Applicants' Specification, which teaches that "a user creates a graphical model, such as a block diagram, of the system to be simulated. ... After creation of the graphical model, the behavior of the dynamic system over a specified time period is simulated using the information entered into the graphical model." (Specification, page 1, ¶ 4 to page 2, ¶ 1). Since claims 1, 32, and 42 do not include "an executable graphical model," Applicants believe the above 35 U.S.C. § 112 rejection of claims 1, 32, and 42 are moot.

Claims 2-4, 6-8, and 10 depend from and incorporate all the features of claim 1. Claims 33-34 and 36-37 depend from and incorporate all of the features of claim 32. Thus, claims 2-4, 6-8, 10, 33-34, and 36-37 also do not recite "an executable graphical model," and Applicants believe the above 35 U.S.C. § 112 rejection of claims 2-4, 6-8, 10, 33-34, and 36-37 are moot.

Accordingly, Applicants respectfully request the Examiner to withdraw the above 35 U.S.C. § 112 rejection of claims 1-4, 6-8, 10, 32-34, 36-37, and 42.

IV. 35 U.S.C. § 102(b) rejections in view of Stewart

The Examiner rejects claims 1, 2, 6, 7, 10, 32, 33, 36, 37, and 42 as being anticipated by Stewart (Office Action, page 7, § 6). Applicants respectfully traverse the rejection.

A. Claims 1, 2, 6, 7, and 10

Claim 1 as amended recites:

> In an electronic device, a method comprising the steps of:
> providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time;
> grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity;
> providing the bus signal as input to a non-virtual operation block; and
> performing an operation on the bus signal with the non-virtual operation block.

Applicants respectfully submit that Stewart fails to disclose each and every feature in claim 1. In particular, Stewart fails to disclose at least the following features of claim 1: "providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time" and "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity."

i. **Feature 1: providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time**

The Examiner alleges that Stewart "simulates and calculates the signal attributes … and data types or complexity" in the "check calculations portion" of the tool (Office Action, page 5, ¶ 5). Applicants respectfully submit that signal attributes include the data type or complexity of the signal and these attributes are not simulated or calculated attributes. As disclosed by Stewart, the check calculations portion of the tool checks whether physical characteristics of a process control system conform to a selected standard protocol (Stewart, col. 4, lines 39-42). Stewart does not disclose simulating the dynamic process control system as part of performing the check calculations portion. Stewart fails to disclose that the behavior of the dynamic system is ever simulated because the physical characteristics of the process control system checked by the check calculations portion are not outputs of the dynamic process control system. Furthermore, Stewart does not disclose "simulating the behavior of the dynamic system over a specified period of time," as required by Applicants' claim.

For at least the reasons set forth above, Applicants respectfully submit that Stewart fails to disclose "providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time."

ii. **Feature 2: grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity**

The Examiner alleges that Stewart discloses signals of different signal types: "current draw per segment" and "minimum voltage per segment" (Office Action, page 8, ¶ 5 to page 9, ¶ 1). Applicants respectfully disagree.

Applicants respectfully submit that the "current draw per segment" and "minimum voltage per segment" are not data signals in a bus signal. Instead, Stewart discloses that "current draw per segment" and "minimum voltage per segment" are names of physical characteristics of bus segments (Stewart, col. 4, lines 34-39) (emphasis added). Thus, Stewart discloses that each bus segment has a "current draw per segment" characteristic and a "minimum voltage per segment" characteristic. Stewart does not disclose that the bus segment is formed from grouping a "current draw per segment" data signal and a "minimum voltage per segment" data signal.

For at least the reasons set forth above, Applicants respectfully submit that Stewart does not disclose "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity."

Claims 2, 6, 7, and 10 depend from and incorporate all the features of claim 1. Accordingly, claims 2, 6, 7, and 10 are allowable for at least the same reasons as set forth above for claim 1.

For at least the reasons set forth above, Applicants respectfully request reconsideration and allowance of claims 1, 2, 6, 7, and 10.

B. Claims 32, 33, 36, and 37

Claim 32 as amended recites:

> A medium holding computer-executable instructions, the instructions including instructions for:
>
> providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time;
>
> grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity;

providing the bus signal as input to a non-virtual operation block; and

performing an operation on the bus signal with the non-virtual operation block.

Applicants respectfully submit that Stewart fails to disclose each and every feature in claim 32. In particular, Stewart fails to disclose at least the following features of claim 32: "providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time" and "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity."

As discussed above with respect to claim 1, Stewart discloses a topology analysis tool that checks whether physical characteristics of a process control system conform to a selected standard protocol. Stewart does not disclose a graphical modeling environment that simulates the "behavior of the dynamic system over a specified period of time."

Also as discussed above with respect to claim 1, Stewart does not disclose "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model" because the alleged two signals are actually physical characteristics of bus segments in a process control system.

Claims 33, 36, and 37 depend from and incorporate all the features of claim 32. Accordingly, claims 33, 36, and 37 are allowable for at least the same reasons as set forth above for claim 32.

For at least the reasons set forth above, Applicants respectfully request reconsideration and allowance of claims 32, 33, 36, and 37.

C. Independent Claim 42

Claim 42 as amended recites:

> A system for executing and displaying a graphical modeling application for simulating behavior of a dynamic system over a specified period of time using information in a graphical model, comprising:
>
> a user-operable input means for inputting data to the application;
>
> a display device for displaying the graphical model representing the dynamic system; and
>
> an electronic device including memory for storing computer program instructions and data, and a processor for executing the stored computer program instructions, the computer program instructions including instructions for performing a non-virtual operation on a bus signal displayed in the graphical model, the bus signal comprising at least two component signals that differ in at least one of data type or complexity.

Applicants respectfully submit that Stewart fails to disclose each and every feature in claim 42. In particular, Stewart fails to disclose at least the following features of claim 42: "a graphical modeling application for simulating behavior of a dynamic system over a specified period of time using information in a graphical model" and "the bus signal comprising at least two component signals that differ in at least one of data type or complexity."

As discussed above with respect to claim 1, Stewart discloses a topology analysis tool that checks whether physical characteristics of a process control system conform to a selected standard protocol. Stewart does not disclose a graphical modeling environment that simulates the "behavior of the dynamic system over a specified period of time."

Also as discussed above with respect to claim 1, Stewart does not disclose "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model" because the alleged two signals are actually physical characteristics of bus segments in a process control system.

For at least the reasons set forth above, Applicants respectfully request reconsideration and allowance of claim 42.

V. 35 U.S.C. § 102(b) rejections in view of Rostoker

The Examiner rejects claims 1-7, 9-10, 32-37 and 42 as being anticipated by Rostoker (Office Action, page 10, § 7). Applicants respectfully traverse the rejection.

A. Claims 5, 9 and 35

Claims 5, 9 and 35 have been canceled. Thus, the above 35 U.S.C. § 102(b) rejections of claims 5, 9 and 35 are moot.

B. Claims 1-4, 6-7, and 10

Claim 1 as amended recites:

> In an electronic device, a method comprising the steps of:
> providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time;
> grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity;
> providing the bus signal as input to a non-virtual operation block; and
> performing an operation on the bus signal with the non-virtual operation block.

Applicants respectfully submit that Rostoker fails to disclose each and every feature in claim 1. In particular, Rostoker fails to disclose at least the following features of claim 1: "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity" and "performing an operation on the bus signal with the non-virtual operation block."

i. Feature 1: grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity

The Examiner alleges that Rostoker discloses "at least two different signal types" because one signal is " 'always high' with low complexity" while the other is " 'sometimes high' with more complexity" (Office Action, page 6, ¶ 4 to page 7, ¶ 1). Applicants respectfully disagree.

Applicants' claim recites that the first signal type and second signal type differ "in at least one of data type or complexity." *Data type* refers to "an internal representation of data on a computer system," such as "Boolean, 16-bit integers, fixed-point, double" (Specification, page 14, ¶ 2, lines 12-14). *Complexity* refers to "whether the values comprising each signal are complex or real numbers" (Specification, page 17, ¶ 2, lines 25-27).

Rostoker discloses four data signals with the same *data type* (*i.e.*, binary) in Item 2220a of Figure 22. Since all of Rostoker's signals are digital signals, *complexity* is not a relevant attribute. Thus, the observation that the *value* of the signal is either "always high" or "sometimes high," or changes infrequently, "low complexity," or more frequently, "more complexity," does not indicate that two signals differ as required by Applicants' claim.

For at least the reasons set forth above, Applicants respectfully submit that Rostoker does not disclose "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity."

ii. Feature 2: performing an operation on the bus signal with the non-virtual operation block

Applicants respectfully submit that Rostoker fails to disclose "performing an operation on the bus signal with the non-virtual operation block." The Examiner alleges Rostoker

discloses this element in FIG. 22 (Office Action, page 10, ¶ 7 to page 11, ¶ 1 referring to col. 32, lines 31-33).

Applicants respectfully submit that FIG. 22 merely illustrates a bus in a schematic diagram, as known in the art. Rostoker describes FIG. 22 as including "graphical representations ... shown on an ECAD display screen 2200 in schematic diagram form" (Rostoker, col. 32, lines 41-46). Rostoker discloses that the "bus signal line" represents "four physical 'wires'" (Rostoker, col. 32, lines 46-47). Therefore, Rostoker discloses that FIG. 22 and the bus signal line are merely graphical representations displayed on a screen for the user. Applicants' claim, however, discloses "performing an operation on the bus signal with the non-virtual operation block." Rostoker never discusses "performing an operation on a bus signal." Thus, Rostoker fails to disclose "performing an operation on a bus signal with a non-virtual operation block."

Claims 2-4, 6-7, and 10 depend from and incorporate all of the elements of claim 1. Accordingly, claims 2-4, 6-7, and 10 are allowable for at least the same reasons as set forth above for claim 1.

For at least the reasons set forth above, Applicants respectfully request reconsideration and allowance of claims 1-4, 6-7, and 10.

C. Claims 32-34 and 36-37

Claim 32 as amended recites:

> A medium holding computer-executable instructions, the instructions including instructions for:
>
> providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time;
>
> grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity;

providing the bus signal as input to a non-virtual operation block; and

performing an operation on the bus signal with the non-virtual operation block.

Applicants respectfully submit that Rostoker fails to disclose each and every feature in claim 32. In particular, Rostoker fails to disclose at least the following features of claim 32: "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity" and "performing an operation on the bus signal with the non-virtual operation block."

As discussed above with respect to claim 1, Rostoker does not disclose two signals that differ "in at least one of data type or complexity" because Rostoker discloses four data signals with the same data type (*i.e.*, binary) in Item 2220a of Figure 22. Also, as discussed above, Rostoker does not disclose "performing an operation on the bus signal with the non-virtual operation block" because Rostoker does not discuss performing any operation on the bus signal and a schematic representation of a bus line does not disclose performing an operation on that bus line.

Claims 33-34 and 36-37 depend from and incorporate all the features of claim 32. Accordingly, claims 33-34 and 36-37 are allowable for at least the same reasons as set forth above for claim 32.

For at least the reasons set forth above, Applicants respectfully request reconsideration and allowance of claims 32-34 and 36-37.

D. Claim 42

Claim 42 as amended recites:

A system for executing and displaying a graphical modeling application for simulating behavior of a dynamic system over a

specified period of time using information in a graphical model, comprising:

a user-operable input means for inputting data to the application;

a display device for displaying the graphical model representing the dynamic system; and

an electronic device including memory for storing computer program instructions and data, and a processor for executing the stored computer program instructions, the computer program instructions including instructions for performing a non-virtual operation on a bus signal displayed in the graphical model, the bus signal comprising at least two component signals that differ in at least one of data type or complexity.

Applicants respectfully submit that Rostoker fails to disclose each and every feature in claim 42. In particular, Rostoker fails to disclose at least the following features of claim 42: "performing a non-virtual operation on a bus signal" and "the bus signal comprising at least two component signals that differ in at least one of data type or complexity."

As discussed above in connection with claims 1 and 32, Rostoker does not disclose "performing an operation on a bus signal." Therefore, Rostoker cannot disclose "performing a non-virtual operation on a bus signal."

Also, as discussed above in connection with claims 1 and 32, Rostoker does not disclose "at least two component signals that differ in at least one of data type or complexity" because Rostoker discloses four data signals with the same data type (*i.e.*, binary) in Item 2220a of Figure 22.

For at least the reasons set forth above, Applicants respectfully request reconsideration and allowance of claim 42.

VI. 35 U.S.C. § 103(a) rejection

The Examiner rejects claim 8 as being unpatentable over Rostoker as applied to claim 2 in view of Simulink, Version 4 reference (Office Action, page 16, § 9). Claim 8 depends on and

incorporates all of the elements of claim 1. Applicants respectfully submit that Rostoker and Simulink, Version 4 reference, alone or in any reasonable combination, fail to disclose or suggest all of the features of claim 8.

Rostoker does not disclose or suggest at least the following features: "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity."

Simulink, Version 4 reference provides general instructions on the use of SIMULINK for performing model-based and system-based design. However, Simulink, Version 4 reference fails to disclose or suggest "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in the graphical model, the first signal type differing from the second signal type in at least one of data type or complexity."

Therefore, Rostoker and Simulink, Version 4 reference, alone or in any reasonable combination, do not support a valid 35 U.S.C. § 103 rejection of claim 8. Accordingly, Applicants respectfully request reconsideration and allowance of claim 8.

VII. Conclusion

In view of the above amendments and arguments, Applicants believe the pending application is in condition for allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-058RCE. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many

months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: June 20, 2008

Respectfully submitted,

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